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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yoram Ofek

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EXAMINER

GREY, CHRISTOPHER P

ART UNIT

PAPER NUMBER

2667

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/961,030

Applicant(s)

OFEK ET AL.

Examiner

Christopher P. Grey

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-19 and 24-48 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-10, 12-18, 23-43, 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shipley (US 5633742) in view of Potash et al. (US 4893318), referred hereinafter as Potash, in further view of Brown et al. (US 5896380), referred hereinafter as Brown.

Claim 1, 28, 36, 46 Shipley discloses a transmitter providing an optical wireless data link to a receiver. Shipley discloses a circuitry within the transmitter for transmitting time frames, where the time frames contain frame delimiters (Col 17 lines 33-48 and fig 10).

Shipley discloses a transmitter having a time base (Col 3 lines 5-32) and a receiver having a clock (Col 18 lines 4-37).

Shipley also discloses the transmitter sending control information (Col 8 lines 44-53)) and data over the optical communication channel, where data and control information are within each frame after the frame delimiter (Col 17 lines 33-48 and fig 10).

Shipley discloses a portable transmitter (element 31) and a receiver (element 24 in fig 1) which are physically separate from one another (see fig 1 elements 31, 32 and 24).

Shipley does not specifically disclose a coordinated universal time signal providing a common time reference; wherein the CTR is coupled to a transmitter subsystem and a receiver subsystem; wherein the receiver subsystem is responsive to the delimiter signals and the CTR, for storing the received data units from the communications channel.

Potash discloses a master clock transmitting timing signals to a number of remote stations containing slave clocks (see fig 3 and Col 2 line 56-61 and Col 5 lines 18-31).

The combined teachings of Shipley and Potash do not specifically disclose the receiver subsystem being responsive to the delimiter signals and the CTR, for storing the received data units from the communication channel.

Brown discloses an ATM switch receiving cells, queuing (storing) the received cells in an inlet fabric, and queuing the cells in core fabric in a time interval (Col 2 lines 2-Col 3 lines 5 and Col 6 lines 15-22), where a clock signal is provided to the controller for controlling the queuing of cells (Col 5 line 9-11).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to couple a master clock as disclosed by Potash, to the transmitter and receiver disclosed by Shipley, wherein the master clock provides a common time reference to each of the slaves (transmitter and receiver). The motivation for this combination is to process accumulated time information to derive information referenced to a desired time standard from information referenced to a given time standard (Col 2 lines 3-19), where it would have been obvious to one of the ordinary

skill in the art at the time of the invention that master clock may provide a universal time as the time standard. Furthermore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the combined teachings of Shipley and Potash, with a scheduler within the receiver, for scheduling the queuing of data within a core fabric (memory) based on a an interval (Col 9 line 33-44). The motivation for this modification is to schedule the storing of data based on a given time reference.

Claim 2, 29, 37, 47 Shipley discloses a plurality of contiguous time frames (Col 11 lines 30-52).

Claim 3, 5, 30, 32, 38, 48 Shipley discloses a beginning of the time frame being signaled by a respective time frame delimiter (Col 17 lines 33-48).

Claim 4, 31, 39 Shipley also discloses the transmitter sending control information (Col 8 lines 44-53) and data over the optical communication channel, where data and control information are within each frame after the frame delimiter (Col 17 lines 33-48 and fig 10).

Claim 6, 26, 40 Shipley discloses the time frame delimiters as disclosed in the rejection of claim 1.

Shipley does not specifically disclose storing each of the respective received data units mapped according to the respective one of the time frames associated with the sending of the respective received data units.

Brown discloses an ATM switch wherein the cells (claim 26) in the core from an inlet destined for an outlet being aligned (see title). Brown discloses queuing cells at an

inlet stage, transferring those cells stored at the inlet stage to an associated outlet stage for transmission out of the switch (Col 2 lines 24-Col 3 line5).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine within the transceiver as disclosed by Shipley, the controller and schedulers as disclosed by Brown. The motivation for this combination is to align data in and out of the switch (see title).

Claim 7, 41 Shipley discloses a number of time frames being received by a receiver as disclosed in the rejection of claim 1.

Shipley does not specifically disclose a queue buffer storing respective ones of the data units received during respective ones of the time frames.

Brown discloses queuing data cells received by a switch during a predefined interval (Col 2 lines 24-Col 3 line5).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine within the receiver receiving time frames as disclosed by Shipley, with the queues and controllers for queuing data based on a predefined time interval as disclosed by Brown, where the interval may be defined by the time frames received.

Claim 8, 42 The combined teachings of Shipley and Potash disclose a common time reference being provided to slave clocks within a number of transceivers as disclosed in the rejection of claim 1.

The combined teachings of Shipley and Potash do not specifically disclose the data units being forwarded out of the respective ones of the queue buffers responsive to the CTR.

Brown discloses a scheduler for forwarding data cells from a queue at a particular time (Col 2 line 24- Col 3 line 5), where a clock is used to control that time (Col 5 lines 9-13).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine within the transceivers as disclosed by the combined teachings of Shipley and Potash, a scheduler for scheduling transmission of data cells from a queue.

Claim 9 Shipley discloses a plurality of time frames being transmitted, wherein each time slot is approximately is 4 microseconds in length (Col 17 lines 33-58), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that a time interval can be determined from knowing the duration of a time slot.

Claim 10 Shipley discloses the transmitter sending control information (Col 8 lines 44-53)) and data over the optical communication channel, where data and control information are within each frame after the frame delimiter (Col 17 lines 33-48 and fig 10).

Shipley discloses a beginning of the time frame being signaled by a respective time frame delimiter (Col 17 lines 33-48).

Claim 12, 44 Shipley discloses the time frame delimiter signal being a safety margin, wherein no data units and control information are transmitted (Col 17 lines 33-48).

Claim 13, 45 Shipley discloses each frame consisting of 9 timeslots where the first time slot is empty. It would have been obvious to one of the ordinary skill in the art at the time of the invention to count the transmitted data units (see fig 10).

Claim 14 Shipley discloses a number of successive time frames as disclosed in fig 10, where it would have been obvious to one of the ordinary skill in the art at the time of the invention to group these time frames, where each 2 consecutive time frames may represent a time cycle.

Claim 15, 17, 18 Shipley also discloses the transmitter sending control information (Col 8 lines 44-53)) and data over the optical communication channel, where data and control information are within each frame after the frame delimiter (Col 17 lines 33-48 and fig 10).

Claim 16 Shipley discloses transmitting control information as disclosed in the rejection of claim 1.

Shipley does not specifically disclose one of the queue buffers being a control queue buffer for storing the control data.

Brown discloses a number of queues for storing information (see fig 3), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that any one of these queues may be designated for control information.

Claim 23 Shipley discloses optical data communication (abstract) and information being encoded (Col 16 lines 51-Col 17 line16), where it would have been obvious to one of the ordinary skill in the art at the time of the invention to use fiber channel controls words within an optical environment.

Claim 24 Shipley discloses optical data communication (abstract) and information being encoded (Col 16 lines 51-Col 17 line16), where it would have been obvious to one

of the ordinary skill in the art at the time of the invention to use at least one of a SONET transport overhead and a SONET path overhead.

Claim 25 Shipley discloses optical data communication (abstract) and information being encoded (Col 16 lines 51-Col 17 line16), where it would have been obvious to one of the ordinary skill in the art at the time of the invention to use digital wrapper framing.

Claim 27 Shipley discloses optical data communication (abstract) and information being encoded (Col 16 lines 51-Col 17 line16), where it would have been obvious to one of the ordinary skill in the art at the time of the invention that a header is included within the data and the control information is encoded using an ATM cell as disclosed in the rejection of claim 1.

Claim 33 The background of the invention discloses an alignment subsystem responsive to delimiters, to delay each of the data units mapped according to the respective one of the time frames associated with the sending of the respective data units (Page 11 lines 12-page 12 line 3).

Claim 34, 35 The background of the invention discloses optical programmable delay lines (Page 11 lines 12-page 12 line 3).

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2. Claims 11, 19, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shipley (US 5633742) in view of Potash et al. (US 4893318), referred hereinafter as Potash, in further view of Brown et al. (US 5896380), referred hereinafter as Brown, in further view of Egbert et al. (US 6091707), hereinafter referred to as Egbert.

Claim 11, 19, 43 The combined teachings of Shipley, Potash and Brown do not specifically disclose a time stamp value within the control information.

Egbert discloses a time stamp value within a frame received (Col 13 lines 10-23).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the combined teachings of Shipley, Potash and Brown, to contain a field within a frame representing a time stamp as disclosed by Egbert. The motivation for this modification is to use the time stamp to estimate how much data is transmitted or received as related to the time stamp value.

Allowable Subject Matter

3. Claims 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Raychaudhuri (US 4641304) discloses a transmission system, where a satellite station divides an absolute time into time frames.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571)272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Grey
Examiner
Art unit 2667

C. Grey
8/8/05

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